Health Care Data Report

ANNUAL REPORT

Utilization and Charges in Wisconsin:

Hospitals and Freestanding Ambulatory Surgery Centers

January - December 2000

Department of Health and Family Services
Division of Health Care Financing
Bureau of Health Information
P.O. Box 309
Madison, Wisconsin 53701-0309

December 2001

FOREWORD

The data for this report were collected quarterly during 2000 from Wisconsin hospitals and freestanding ambulatory surgery centers, under Chapter 153, Wisconsin Statutes. The report presents an annual summary of data on utilization and charges at those facilities.

Sandy Breitborde, Director, Bureau of Health Information, provided overall direction for this report. Judith Nugent, Chief, Person-Level Data and Analysis Section, supervised the report's planning and production.

Hospital inpatient and ambulatory surgery data not included in this report may be available through standard public use files or through custom data requests. Interested persons should contact BHI regarding the availability and cost of additional data.

Inquiries should be directed to:

Division of Health Care Financing
Bureau of Health Information
P.O. Box 309
Madison WI 53701-0309

Telephone: (608) 266-2129

E-mail: askbhi@dhfs.state.wi.us

Persons with hearing or speech impairments may call:

1-800-947-3529

Your message will be relayed to the Bureau of Health Information.

Suggested citation:

Wisconsin Department of Health and Family Services, Division of Health Care Financing, Bureau of Health Information. *Health Care Data Report: 2000 Annual Report* (PHC 5320). December 2001.

TABLE OF CONTENTS

Appendices

INTRODUCTION

This report summarizes utilization and charge data on patients treated in hospitals and freestanding ambulatory surgery centers (FASCs) in Wisconsin during calendar year 2000. The portion of the report devoted to inpatient data contains information on services provided to hospital inpatients, the primary reasons for hospitalization, charges for services received, and the most common diagnostic conditions. It also contains selected information for individual hospitals. Comparisons are made to 1999 annual data to assist the reader in understanding where change occurred. The section devoted to ambulatory surgery reviews utilization and charges for patients undergoing selected surgical procedures at hospitals and FASCs.

General medical-surgical (GMS) and specialty hospitals (excluding federally operated hospitals) provided inpatient data. The report includes data from 125 GMS hospitals, 12 psychiatric hospitals, 1 alcohol and other drug abuse (AODA) hospital, 2 rehabilitation hospitals, and 2 state-operated mental health institutes that reported data during 2000. Ambulatory surgery data were collected from 121 GMS hospitals and 32 FASCs. Partial-year data from facilities that closed or began operations during 2000 are included.

How the Report is Organized

- Preceding the body of the report is a summary of data highlights.
- Immediately following the summary data is a reader's guide to health care data, which describes the type of data collected by BHI and how the reader can use it.
- Chapter I provides an overview of utilization and charge information for inpatient hospitalizations in Wisconsin.
- Chapter II contains two sections. The first presents utilization and charge data on six major categories of service (e.g., obstetrical, cardiac). The second section focuses on the most common, most expensive, and highest charge-generating reasons for hospitalization.
- Chapter III presents information on E-codes, which are injury codes included on patient discharge records. Data are presented statewide and by analysis area.
- Chapter IV contains inpatient tables for each hospital. The charge data for GMS hospitals have been adjusted for patient risk. (See page 6.) Risk-adjusted charges permit better comparisons among groups of patients who are treated for the same condition but who have varying degrees of illness. Both actual average charges and risk-adjusted average charges are presented on the individual GMS hospital tables.
- Chapter V contains combined ambulatory surgery tables for GMS hospitals and FASCs.
- Appendix 1 presents summary 2000 data on all Wisconsin hospitals by type, and regional and inpatient volume group data on GMS hospitals.
- Appendix 2 presents comparative data for calendar year 1999.
- The information found in Appendices 1 and 2 can be compared to the data on the individual hospital tables in Chapter IV.
- Appendix 3 contains a list of the diagnosis codes for the patient categories used for the rehabilitation hospitals, and a discussion of the methodology used to risk-adjust the charge data.
- Appendix 4 presents three maps. The first shows the location of Wisconsin's hospitals and freestanding ambulatory surgery centers; the second indicates the boundaries

for the geographic analysis areas used for inpatient analysis; the third describes the boundaries of the three-digit ZIP code areas used in ambulatory surgery analysis.

- Appendix 5 lists hospitals alphabetically by city and, for each hospital, the applicable county, type of hospital, analysis area, and inpatient volume group. Appendix 5 also lists the freestanding ambulatory surgery centers in the state.

SUMMARY DATA: JANUARY - DECEMBER 2000

Inpatient Data

- In 2000, Wisconsin hospitals reported 635,174 inpatient hospitalizations. These resulted in approximately 2.9 million days of care and total billed charges of almost $6.6 billion.
- On average, a hospital patient was charged $10,344 per hospitalization during 2000. In general medical-surgical (GMS) hospitals, the average inpatient charge was $10,373. In the specialty hospitals, charges differed between long-term care and short-term specialty care. The average charge was $5,972 in psychiatric hospitals, $9,264 in the alcohol and other drug abuse (AODA) hospital, $21,487 in rehabilitation hospitals, and $30,320 at the state-operated mental health institutes.
- The average hospital stay was 4.6 days. Patients stayed an average of 4.3 days at GMS hospitals, 9.2 days at psychiatric hospitals, 15.9 days at the AODA hospital, 17.2 days at rehabilitation hospitals, and 57.5 days at the state-operated mental health institutes.
- In 2000, there were 66,440 obstetrical hospitalizations (DRGs[1] 370-375) and 69,425 neonatal hospitalizations (DRGs 385-391). There were also 98,979 cardiac, 57,062 orthopedic, 34,602 psychiatric, and 16,490 AODA-related hospitalizations in Wisconsin (includes rehabilitation hospitals and state-operated mental health institutes). Combined, these accounted for 54 percent of all hospitalizations in the state.
- The most common reasons for hospitalization were related to birth. These included normal newborn (DRG 391) and normal delivery (DRG 373). Together, these two DRGs represented 15 percent of all hospitalizations.
- Most neonatal stays were classified as "normal newborns" (full term without complications), accounting for 51,288 hospitalizations (74 percent of all neonatal hospitalizations) with an average charge of $1,158 and an average length of stay of 2.0 days.
- Similarly, seventy percent of all deliveries were classified as "normal" (vaginal delivery without complications). Normal deliveries accounted for 46,613 hospitalizations at an average charge of $3,414. In 12 percent of deliveries, there were complications during vaginal delivery or additional surgery at the time of delivery (e.g., sterilization).
- Approximately 17 percent of all babies were delivered by cesarean section.
- Statewide, 9,750 patients had open-heart surgery at 29 GMS hospitals, with an average length of stay of 8.4 days and an average charge of $51,555.
- Four GMS hospitals performed 59 heart transplants, with an average charge of $201,451 and an average length of stay of 49.2 days.
- The most expensive DRGs were Extensive Third Degree Burns with Skin Graft (DRG 504), at an average charge of $230,165, and Heart Transplant (DRG 103), at an average charge of $201,451. Combined, they accounted for only 82 hospitalizations, yet their complexity and length of stay resulted in total charges of more than $15 million.
- The DRGs generating the most total charges were Major Joint and Limb Reattachment (DRG 209, which includes hip replacements), at $295 million, and Cardiac

[1] See definition on page 9.

Pacemaker Implant or Angioplasty with Coronary Artery Stent Implant (DRG 116), at $261 million.

- Females accounted for 58 percent of all hospitalizations. Eighteen percent of hospitalizations among females were childbirth-related.
- During 2000, inpatient hospitalizations and ambulatory surgeries due to injuries accounted for $755 million in charges at hospitals and FASCs (freestanding ambulatory surgery centers).

Ambulatory Surgery Data

- Ambulatory surgery was performed at 121 Wisconsin GMS hospitals and 32 FASCs in 2000. Data for 632,011 cases were collected: 543,627 from hospitals and 88,384 from FASCs.
- Colonoscopy, a diagnostic procedure of the lower gastrointestinal tract, was the most frequently reported ambulatory procedure in 2000, with 39,558 cases.
- Laparoscopic cholecystectomy (gallbladder removal) was the most costly of the ambulatory procedures covered in this report, with a median charge of $5,883. The least expensive was flexible sigmoidoscopy, with a median charge of $373.

Comparison to 1999 Annual Report Data

- Compared to 1999, the number of hospitalizations in 2000 increased by 2.2 percent, while the number of patient days grew by 0.9 percent.
- Statewide, the average charge per hospitalization rose from $9,486 to $10,344 (9.1 percent) between 1999 and 2000.
- The average charge per hospitalization increased from $9,486 to $10,373 (9.4 percent) at GMS hospitals; and from $20,729 to $21,487 (3.7 percent) at rehabilitation hospitals.
- Average charges decreased from $6,052 to $5,972 (1.3 percent) at psychiatric hospitals; from $9,286 to $9,264 (0.2 percent) at AODA hospitals; and from $33,117 to $30,320 (8.4 percent) at the state-operated mental health institutes.
- Average length of stay decreased 1.0 percent at GMS hospitals, 2.8 percent at psychiatric hospitals, 5.6 percent at the AODA hospital, and 10.9 percent at the state-operated mental health institutes. Average length of stay increased 5.9 percent at rehabilitation hospitals.
- The number of cardiovascular ambulatory surgeries increased 4.8 percent from 1999 to 2000; while facility charges attributable to these surgeries grew by 14.0 percent, from $161.9 million to $184.6 million.

READER'S GUIDE TO THE ANNUAL REPORT

This Reader's Guide provides a basis for understanding and evaluating the data in this report. It explains the kinds of data collected and the terminology needed to understand it. (See page 7 for an explanation of terms used in this report.)

Data Source

This report presents selected data from four quarters of 2000 patient-level data submitted by hospitals and FASCs.

The patient-level data submitted include items such as patient characteristics (age, sex, race), diagnoses, procedures, and charges. Data are derived from billing forms and include information on each patient served in a hospital or freestanding ambulatory surgery center. Individual patients by name cannot be identified, in order to maintain patient confidentiality. Hospitals and FASCs submit patient-level data every three months.

What You Can Learn From this Report

The following is a summary of the information presented in this report:

- The report identifies the average charge for selected medical or surgical treatments. It does not address how much an individual will actually be billed by the facility for that service because each case is different.
- The report identifies a facility's average charges for selected services. It does not provide information on physician charges for inpatient or ambulatory services because those data are not collected.
- The report identifies the variation in charges among hospitals. Hospital charges vary for many reasons; a summary of some of those reasons is provided on pages 6-7.
- The report identifies trends in health care utilization and charges.

Charges vs. Revenues

The amount a facility bills for a patient's care is known as the charge. What it actually receives in payment is known as revenue. This report lists the average charges billed by facilities for selected services. These charges are derived from billing forms, which list the actual charges for each patient. However, health care facilities frequently negotiate discounts with insurance companies or other large purchasers of health care services. The amount actually collected by the facility may differ substantially from the amount billed.

Adjusting the Data for Patient Risk

Many factors affect how much hospitals charge patients for care. One major factor is patient risk, or the severity of illness of patients served by a facility. Sicker patients tend to stay in the hospital longer, require more intensive care, and use more resources than patients who are less ill. Because these factors affect how much patients are charged, comparing charges among patients with the same illness but different degrees of severity is problematic. But differences in severity of patient illness can be estimated, and adjustments can be made that allow better comparisons of charges between patients with varying severity.

In recent years, a number of methods have been developed to measure and adjust for variations in hospital charges caused by severity differences in patients. BHI uses computer software products that risk-adjust the inpatient data submitted by hospitals.

The risk-adjustment software used for this report looks at the diagnosis and procedure codes, sex, age, admission source, and discharge status for each patient. All these factors may affect the amount of resources patients use. The software then compares each patient to a nationwide database of similar patients and

adjusts the patients' charges to account for the effect of these severity factors. In making this adjustment, the software attempts to calculate what a patient's charges would have been if the patient's severity of illness was the same as the "average" patient's.

If the actual average charge for a group of patients is *higher* than their risk-adjusted average charge, it means that the patients in this group had a *greater* than average severity of illness.

Once a facility's charges have been risk-adjusted, they may be compared to other risk-adjusted charges, such as those of another hospital or group of hospitals.

In this report, risk-adjusted DRG (Diagnosis Related Group) charge data are presented for each GMS hospital and the following three comparison groups: analysis area, inpatient volume group, and all GMS hospitals as a single group. Analysis areas group GMS hospitals geographically; inpatient volume groups allow comparisons between GMS hospitals of similar size; the "all GMS hospitals" data permit a hospital to be compared to statewide figures.

The report does not risk-adjust charges for psychiatric and alcohol and other drug abuse (AODA) DRGs because differences in charges for these DRGs usually reflect program differences rather than variations in illness severity. For example, one hospital may treat psychiatric patients in longer-term inpatient programs, while another facility may stabilize similar patients and then transfer them to residential facilities following a short inpatient stay.

***Note**: See the technical note on page 477 for a more detailed description of the methodology used to risk-adjust data in this report.*

Why Facility Charges May Differ

New technology - The equipment facilities use to provide services differs in age, sophistication, and utilization. Facilities with the latest technology may have higher charges than those with older, less sophisticated equipment.

Staffing costs - Salary scales may differ regionally and are typically higher in urban than rural areas. Furthermore, competition for nurses and other skilled personnel may result in higher staffing costs and, therefore, higher charges.

Intensity of care - Facilities differ in the severity of illness of patients (i.e., some facilities care for more severely ill patients than others). Patients within the same DRG may need very different levels of service and staff.

Efficiency of operation - Facilities vary in the utilization and efficiency of services they provide. Infrequently used services may cost more per patient than services that are used more frequently.

Differences in coding - Facilities vary in their coding systems and personnel, and in the number of billing codes they put on a billing form. The use of additional appropriate codes may result in a patient being assigned to a DRG with greater reimbursement or may otherwise justify higher charges. Facilities with better-trained personnel or more sophisticated coding software are more likely to place these additional codes on their billing forms and, therefore, may have higher charges than facilities with less expertise.

Payer mix:

Discounts - Facilities negotiate and offer volume discounts to Health Maintenance Organizations (HMOs), Preferred Provider Organizations (PPOs), and other large-volume purchasers of health care services. The number of these organizations has grown considerably in recent years. Full charges are paid for only a very small proportion of patients.

Percentage of government pay - Government payers generally reimburse facilities at rates below their full charges, similar to the discounts offered to commercial payers. Therefore, facilities with a large percentage of patients whose charges are paid either by government programs or discounted commercial payers may report large gaps between what they bill and

what they actually receive. This may result in higher charges, including those for non-discounted patients.

Facility price structures - Some facilities spread the cost of services and equipment over all patients. Others bill the full cost of a service to those patients actually using the service. Furthermore, facilities may provide some services at a loss while allowing other facility operations to subsidize the losses. Any of these practices can result in significantly different charges for a given DRG.

Range of services provided - Facilities differ in the range of services they provide to patients. Some may provide the full range of services required for diagnosis and treatment during the stay. Others may stabilize patients and then transfer them to another facility for more specialized or rehabilitative care.

Data-related issues - Facilities differ in the number of cases served, the case-mix and illness severity of patients, and the comparability of patients within DRGs. For example, a single case can greatly affect a facility's average charge if the facility reported only a few cases.

Capital expenses - Facilities differ in the amount of debt and depreciation they must cover in their rate structure. A facility with a heavy debt load, a new building, or a major renovation to amortize may have higher charges than a facility not facing such expenses. Furthermore, facilities may choose to lease or purchase equipment or facilities. The choices made about financing of capital projects may affect charges in different ways.

Basic Terms and Concepts

Statistics

Distribution - Distribution is simply a term referring to a set of events, or data. The charges in the following example could be referred to as a distribution. The distribution can be described in many ways, such as the range, which indicates the low and high values in the distribution (in this case $4,984-$7,002). Average, median, percentile distribution, and standard deviation are other terms used to describe the data in the distribution.

Average (mean) - This is the sum of all values in a distribution divided by the number of values in the distribution. For example, to determine the average charge per discharge for seven pneumonia patients at a particular hospital, the charges for each patient are added together and divided by seven. If the charges for the seven patients were $6,216, $5,425, $4,984, $5,733, $7,002, $6,558, and $5,193, the average charge per discharge would be computed as follows:

$6,216
5,425
4,984
5,733
7,002
6,558
+5,193
$41,111

$41,111÷7=$5,873

Median - The median is the middle value in a distribution when all the values are ranked in order from low to high or high to low. To determine the median charge for the same seven pneumonia patients, the charges are first ranked in order:

$4,984, $5,193, $5,425, $5,733, $6,216, $6,558, and $7,002

The median charge is the middle value: $5,733.

Averages (means) can be significantly affected by a few unusually low or high values (called "outliers"). Since median figures are not affected to such a degree by outliers, they may be more representative of the distribution. Notice if the highest charge for the seven pneumonia patients was $10,502 instead of $7,002, the average charge would climb from $5,873 to $6,373, but the median charge would remain at $5,733. In this case the median charge is a better representation of the facility's charges for pneumonia patients.

Percentile and percentile distribution - A percentile marks a point in a distribution above and below which some percent of the events, or data, fall. For instance, if $2,000 represents the 25th percentile of charges for a certain DRG or ambulatory surgical procedure, it means 25 percent of the patients who were in the DRG or who had the procedure were charged $2,000 or less. Conversely, 75 percent of the patients were charged $2,000 or more. The 25th, 50th (median), and 75th percentiles are also referred to as quartiles, because they mark the points in the distribution above and below which lie one-quarter, one-half, and three-quarters of the events.

Standard deviation - This is a measure of the average variation above or below the mean. When data are in a normal distribution, approximately 68 percent of the values will fall within one standard deviation of the mean, 95 percent within two standard deviations, and 99.7 percent within three standard deviations.

Inpatient Data

Analysis areas - These are groups of counties originally established as health planning districts for federal and state governments. The analysis areas are: Southern (Area 1), Southeastern (Area 2A), Milwaukee County (Area 2B), Lake Winnebago (Area 3), Northeastern (Area 4), West Central (Area 5A), Southwestern (Area 5B), North Central (Area 6) and Western Lake Superior (Area 7). (Refer to the map in Appendix 4 for the analysis area boundaries.)

Average (mean) charge - This is the sum of all charges for a service or facility divided by the number of discharges. The average charge is an approximation of what an average patient would be charged. The charges listed in these reports do not include fees for physician services or convenience services, such as television.

Average (mean) length of stay - This is the total number of days spent in a hospital by a group of patients divided by the number of discharges. Length of stay affects charges because longer stays generate higher charges. In addition, it is a rough indicator of hospital efficiency or program philosophy. For example, two hospitals may have significantly different average stays for psychiatric inpatient treatment. These differences may indicate that a facility offers extended hospital stays, which tend to have higher charges, or alternatives, such as outpatient treatment, which tend to have lower charges.

Median charge and median length of stay - Charges and lengths of stay may also be presented as medians. The median charge represents the amount that half the patients were charged more than and half were charged less than. The median length of stay is expressed as a number of days. Half the patients stayed in the hospital longer than the median length of stay, and half remained there a shorter period of time.

Discharge – A patient becomes a discharge once he or she officially leaves the health care facility. The number of discharges affects how a hospital is staffed, what types of services a hospital offers, and how well it competes in the broader health care system. To some degree it also affects costs because, when viewed relative to the facility's capacity, the number of discharges is a partial indicator of efficiency. The number of discharges is used to calculate the average charge and average length of stay at a facility.

DRG - The basic unit of analysis for inpatient hospitalizations in this report is the diagnosis-related group, or DRG. It is one method of classifying inpatients. The federal government established DRGs as a way to pay hospitals for care of Medicare patients; all payers now use DRGs.

DRGs group patients with similar characteristics, such as diagnoses, procedures, the presence or absence of complicating conditions, and age. For example, patients undergoing simple cesarean sections are

assigned to DRG 371. C-section patients with additional complications during delivery are assigned to DRG 370.

Under Medicare, reimbursements for all patients in the same DRG are the same amount with only very unusual cases receiving more reimbursement. In 2000, there were 499 DRGs. Definitions of DRGs are updated by the federal government annually on September 30. Wisconsin's Medical Assistance (Medicaid) program has also developed a DRG-like program for reimbursing hospitals for their Medical Assistance patients.

Except for rehabilitation hospitals, BHI uses DRGs to classify all hospital inpatients. By using DRGs, BHI is able to present utilization and charge data in a manner commonly understood by health insurers, providers, and other health care experts.

To describe patients at rehabilitation hospitals, BHI uses a classification system developed by the federal Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration). This system groups patients into rehabilitation categories (e.g., stroke, spinal cord injury). The table in Appendix 1 lists the diagnosis codes used to create these categories.

E-Codes – Health care providers and death certificate coders use E-codes (the "E" comes from "external" cause) to describe the cause of an injury resulting in treatment or death. E-codes are part of the International Classification of Diseases (ICD-9-CM codes), which are used to describe all diagnoses and surgical procedures. BHI collects the E-codes for all injury-related hospitalizations and outpatient surgeries in Wisconsin.

Expected payer - Data on expected payers are compiled from hospital bills. The bills indicate who the facility expects will pay for the services; however, the expected payer does not always pay the bills. A patient's insurance may not cover the particular procedure. The indicated insurer may not actually cover a patient. Therefore, expected pay sources are to be viewed as preliminary.

Expected pay sources include the following:

Medicare - reimbursement under Part A (facility care) of Title 18. Medicare is a federal health insurance program for the elderly and disabled.

Medical Assistance - reimbursement from Wisconsin's Medicaid (Title 19) program only. Reimbursement from Medicaid programs in other states is categorized as *Other Government.* Medicaid is a federal/state program that helps pay for health care for indigent and other eligible persons.

Other Government - reimbursement from CHAMPUS (refers to Civilian Health and Medical Program of the Uniform Services - health benefits for military personnel and dependents), county general relief, county 51.42/51.437 programs, Medicaid from a state other than Wisconsin, and other government sources.

Commercial Insurance - reimbursement from Blue Cross/Blue Shield and other traditional insurance companies, alternative payment systems (e.g., HMOs, PPOs), self-funded plans, and Workers' Compensation.

Self-Pay - reimbursement from a patient's own resources. Self-Pay may also include insurance that has not been assigned (reimbursement made directly to the patient, rather than to the facility).

Unknown - the facility had not yet determined from whom it expected reimbursement.

HCFA-1450 - see UB-92 form.

Hospital Types - There are five types of hospitals providing services in Wisconsin:

Alcohol and other drug abuse (AODA) hospitals - provide diagnostic and therapeutic services to patients with drug or alcohol dependencies.

General medical-surgical (GMS) hospitals - provide diagnostic and therapeutic services to patients for a variety of medical conditions, both surgical and non-surgical.

Psychiatric hospitals - provide diagnostic and therapeutic services to patients with mental or emotional disorders.

Rehabilitation hospitals - provide a comprehensive array of restoration services for the disabled and all support services necessary to help them attain their maximum functioning.

State-operated mental health institutes - provide comprehensive and intensive diagnostic, therapeutic, and support services to patients with unusually complex or difficult mental, emotional, or developmental disorders.

ICD-9-CM codes - (International Classification of Diseases-9th Edition-Clinical Modification) the ninth version of a coding scheme used by hospitals and third-party payers to classify diagnoses and procedures.

Inpatient volume groups - a system for classifying hospitals based on the total number of discharges, adjusted to account for patient mix. Using data from calendar year 2000, the number of patients within each DRG at a hospital was multiplied by the statewide average charge for that DRG. These adjusted charges were then totaled for each hospital, and the hospitals were ranked from lowest to highest. Based on these data, six inpatient volume groups for GMS hospitals were created: five containing 21 hospitals, the sixth containing 20.

Newborn - a discharge reported in the range of ICD-9-CM codes V30 through V39 under *Principal Diagnosis* on the UB-92 form. The term refers to a baby born in a hospital.

Racial distribution - self-reported data on the racial background of patients. Racial groups appearing in the report include Native American, Asian/Pacific Islander, Black, White, Other, and Not Ascertained. Patients are not required to identify their racial background, and the data are based solely on how patients classify themselves.

Risk adjustment - also known as severity adjustment, the modification of hospital data to account for differences in the severity of illness of patients. By adjusting for variation caused by differences in patient risk or severity of illness, more accurate comparisons of data (e.g., charges) can be made between hospitals.

Specialty hospital - a hospital that provides services to patients with specified medical conditions or for special categories of patients. In Wisconsin, this includes psychiatric, alcohol and other drug abuse (AODA), and rehabilitation hospitals, as well as the state-operated mental health facilities. Specialty hospitals were placed in a group by themselves, inpatient volume group 7.

UB-92 form - a uniform patient billing form (HCFA-1450) developed by a national uniform billing committee under the auspices of the federal Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration).

Ambulatory Surgery Data

Ambulatory surgery - Also called outpatient surgery, ambulatory surgery refers to surgical procedures for which patients require less than a 24-hour stay.

Patients undergoing ambulatory surgery are not necessarily comparable to those undergoing the same procedure on an inpatient basis. An inpatient may have greater severity of illness than an outpatient or may have additional, more complicated procedures performed at the same time. Then, too, physicians may differ over the choice of an inpatient versus an outpatient setting for surgery on the same type of patient.

However, there is very little difference between the patients treated in hospital-based ambulatory surgery units and freestanding ambulatory surgery centers (FASCs). FASCs tend to be located in urban areas and compete openly with hospitals for patients.

Case - defined as one patient visit, even though more than one procedure may be performed during the same surgical episode. For instance, if a myringotomy is performed on both ears during one visit, only one case will be counted, even though two procedures are performed.

CPT-4 codes - a coding scheme developed by the American Medical Association to classify procedures in an ambulatory setting.

Freestanding ambulatory surgery center (FASC) - This is a facility dedicated solely to the provision of surgery on an outpatient basis. FASCs are owned and operated independently of a hospital. BHI collects data only from FASCs certified to treat Medicare patients, although these facilities typically treat many patients whose services are reimbursed by a variety of third-party payers. The data submitted to BHI by FASCs includes all patients who underwent ambulatory surgery, regardless of payer type.

HCFA-1500 - a federal billing form used by hospitals, physicians, clinics, and freestanding ambulatory surgery centers for reimbursement of outpatient services from the Medicare and Medicaid programs and from commercial insurance companies.

Hospital-based outpatient surgery unit - A section of a hospital that provides ambulatory surgery, these units may be part of a hospital campus or in separate buildings. They are owned and controlled by the parent hospital facility.

Procedure - a surgical operation performed on a person during a patient visit, as listed in the ICD-9-CM and CPT-4 codes. A person may undergo more than one procedure during a single surgical operation. For example, a patient who had arthroscopy with tendon repair on one leg undergoes two separate procedures.

Three-digit ZIP code area - used for geographic comparisons of ambulatory surgery utilization and charge data. Each area contains all facilities whose ZIP code begins with the same three digits (e.g., 530, 537). Refer to the map in Appendix 4 for the three-digit ZIP code area boundaries.

CHAPTER I. OVERVIEW OF HOSPITAL INPATIENT UTILIZATION AND CHARGES

Between 1999 and 2000 GMS hospitals continued the trend of shorter average lengths of stay and higher average charges. The number of inpatient hospitalizations, however, increased for the third year in a row, rising from 602,936 to 616,814 hospitalizations, or 2.3 percent. The average charge at GMS facilities rose by 9.4 percent in 2000, after rising 6.3 percent the year before. Since 1989, the yearly number of inpatient hospitalizations and average length of stay at GMS facilities have declined by approximately 5 and 23 percent, respectively, while the average charge per stay has increased more than 136 percent.

Hospitalizations at psychiatric hospitals declined 0.6 percent from 1999 to 2000, while patient days declined 3.3 percent. The average charge per stay declined 1.3 percent.

The average charge per stay at the AODA hospital declined 0.2 percent. The number of hospitalizations and patient days increased 8.6 percent and 2.5 percent, respectively.

Utilization increased at rehabilitation hospitals, with a 0.9 percent rise in hospitalizations and a 6.8 percent rise in patient days. The average charge per stay rose 3.7 percent.

The average charge per stay fell 8.4 percent at the state-operated mental health institutes. Hospitalizations at these two facilities increased 8.6 percent, while patient days declined 3.2 percent from the year before.

Note: In this report, the terms *hospitalization* and *discharge* are used interchangeably.

Table 1. Comparative summary of utilization and charges for hospitalizations in Wisconsin, 1999 and 2000

	2000	1999	% Diff
Number of Hospitalizations	635,174	621,204	2.2
Total Patient Days	2,930,329	2,904,135	0.9
Average Stay (days)	4.6	4.7	-1.3
Hospitalizations per 1,000 Population	118.4	117.3	0.9
Patient Days per 1,000 Population	546.3	548.4	-0.4
Total Charges	$6,566,973,231	$5,889,519,788	11.5
Average Charge per Hospitalization	$10,344	$9,486	9.1

Note: Except for the state-operated mental health institutes, hospitalizations with lengths of stay greater than 100 days were not included when computing the charge data above. These hospitalizations ***were*** *included to compute the number of hospitalizations, patient days, average length of stay, and population-based rates. All hospitalizations of more than 999 days were excluded entirely from the data. During 2000 there were 33 such hospitalizations.*
Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 2. Summary data for Wisconsin hospitals, by type, 2000

Type	Number of Hospitals	Number of Hospitalizations	Patient Days	Average Stay (days)	Average Charge per Day	Average Charge per Stay
GMS	125	616,814	2,656,134	4.3	$2,437	$10,373
PSYCH	12	15,409	142,220	9.2	835	5,972
AODA	1	139	2,212	15.9	582	9,264
REHAB	2	793	13,632	17.2	1,331	21,487
STATE	2	2,019	116,131	57.5	527	30,320
TOTAL	142	635,174	2,930,329	4.6	2,292	10,344

Note: Except for the state-operated mental health institutes, hospitalizations with lengths of stay greater than 100 days were not included when computing the charge data above. These hospitalizations ***were*** *included to compute the number of hospitalizations, patient days, and average length of stay.*

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 3. Percentage change in utilization and charges in Wisconsin hospitals, by type, 1999 to 2000

Type	Number of Hospitalizations	Patient Days	Average Charge Per Stay
GMS	2.3%	1.3%	9.4%
PSYCH	-0.6	-3.3	-1.3
AODA	8.6	2.5	-0.2
REHAB	0.9	6.8	3.7
STATE	8.6	-3.2	-8.4

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

CHAPTER II. SELECTED SERVICES PROVIDED TO INPATIENTS

This chapter has two sections. The first presents statewide information on six broad categories of hospitalization: obstetrical, neonatal, cardiac, orthopedic, psychiatric, and alcohol and other drug abuse (AODA). Data reported include the number of hospitalizations, the average length of stay, the average charge, and the median charge per hospitalization.

The second section reviews the ten most frequent reasons for hospitalization, the ten most expensive hospitalizations, and the ten types of hospitalization that generated the greatest amounts in total charges. Three tables are presented, again containing the number of hospitalizations, the average length of stay, the average charge, and the median charge per hospitalization.

The analysis is restricted to GMS (general medical-surgical), psychiatric, and AODA facilities. Patients in these facilities accounted for 99.6 percent of all Wisconsin hospitalizations in 2000. Patients in the state-operated mental health institutes and the rehabilitation hospitals are excluded because of their atypical characteristics (unusually long lengths of stay and high charges). Additional data on these special facilities are available as a data request.

Patient hospitalizations are defined in terms of diagnosis-related groups (DRGs). DRGs are a method of classifying hospital stays according to the diagnosis of the patient, the procedures performed, and other factors, such as age and the presence of complications or comorbidities (other conditions that affect the amount of care required by a patient). Many third-party payers use DRGs to reimburse a hospital at a fixed amount for all similar patients, regardless of the length of stay or actual cost incurred. The DRG system is also widely used in many kinds of health data analysis. This report uses DRGs as a way to compare similar patients.

Section 1: Hospitalization Categories

Birth-Related Hospitalizations: the Mothers

In 2000, 66,440 women delivered babies (single and multiple births) in Wisconsin hospitals, up from 65,343 in 1999.

Most deliveries (70.2 percent) were normal and uncomplicated (DRG 373). The remaining vaginal deliveries, including those with complicating diagnoses or concurrent procedures, such as sterilization (DRGs 372, 374, and 375), represented 12.4 percent of deliveries.

Statewide, the rate for Cesarean sections, also called C-sections (DRGs 370 and 371), rose to 17.4 percent of deliveries from 16.8 percent the year before.

Differences in C-section rates by hospital are often studied because they reflect individual physician practices, socioeconomic factors, access to and availability of prenatal care, and other factors. Hospitals with few deliveries may have higher C-section rates, simply because small changes in the number of C-sections affect rates more when the number of deliveries is small than when it is large. However, hospitals with many deliveries may also have high C-section rates because they have programs aimed at treating high-risk pregnancies. Therefore, a C-section rate by itself is not an indicator of hospital quality or performance but may highlight an area for further review.

Among facilities with more than 500 obstetric cases, Saint Joseph's Hospital, Marshfield, had the highest C-section rate, at 31 percent of deliveries (up from 29 percent in 1999). Beloit Memorial Hospital, Inc., Beloit, had the second highest rate, at 27 percent (up from 21 percent the year before). The lowest C-section rates at large obstetric facilities were 11 percent, at St. Michael Hospital in Milwaukee

(up from 9 percent the previous year), and 11 percent, at St. Elizabeth Hospital, Appleton (up from 10 percent in 1999).

Table 4. Deliveries in Wisconsin hospitals, 2000

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
370	C-Section with Complications	2,833	4.8	$9,505	$7,524
371	C-Section without Complications	8,746	3.7	7,044	6,434
372	Vaginal Delivery with Complicating Diagnoses	6,321	2.7	4,846	3,849
373	Normal Delivery	46,613	2.1	3,414	3,043
374	Vaginal Delivery with Sterilization &/or D&C	1,882	2.3	6,604	5,867
375	Vaginal Delivery with Operating Room Procedure	45	2.8	6,426	4,760
	Total Deliveries	66,440			

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Birth-Related Hospitalizations: The Babies

Obstetric hospitalizations refer to the delivering mothers. The hospital stays of new babies are referred to as neonatal hospitalizations. They include newborns in the birth hospital, newborns transferred to another hospital before reaching 28 days of age, and a small number of low-birthweight infants less than 28 days old who were re-admitted following their initial hospital stay.

Neonatal hospitalizations in GMS facilities rose in 2000 to 69,425, from 68,382 in 1999.

Table 5. Neonatal hospitalizations in Wisconsin, 2000

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
385	Neonates, Died or Transferred	1,331	4.1	$10,258	$1,731
386	Extreme Immaturity or Respiratory Distress	1,131	34.6	66,638	45,084
387	Prematurity with Major Problems	1,189	14.2	21,088	14,055
388	Prematurity without Major Problems	2,336	4.7	4,851	1,767
389	Full Term Neonate with Major Problems	3,511	4.2	6,429	2,734
390	Neonate with Other Significant Problems	8,639	2.4	1,825	1,325
391	Normal Newborn	51,288	2.0	1,158	1,077
	Total Neonatal Hospitalizations	69,425			

Note: Includes newborns in the hospital of birth, newborns transferred to other hospitals, and low birthweight infants readmitted when less than 28 days old after their initial hospital stay.

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Cardiac Hospitalizations

In 2000, cardiac diagnoses accounted for 98,979 hospitalizations (up from 95,145 in 1999). These patients represented 15.7 percent of all hospitalizations and 24.1 percent of all inpatient charges, compared to 15.4 percent and 23.7 percent, respectively, the year before. Charges for cardiac-related hospitalizations reached almost $1.6 billion.

Twenty-nine GMS hospitals (two more than in 1999) performed open-heart surgery (DRGs 104-109) on 9,750 patients, a 4.2 percent increase in the number of open-heart surgeries from 1999. Three of the facilities each performed only one surgery, and one facility performed only nine. The next smallest number of surgeries a facility performed was 73. The largest number of open-heart surgeries (1,949) was performed by St. Luke's Medical Center in Milwaukee.

Four urban teaching hospitals performed 59 heart transplants in 2000, although most were performed at two of the facilities. St. Luke's Medical Center, Milwaukee, performed 31 transplants; University of Wisconsin Hospital and Clinics Authority, Madison, performed 20; Children's Hospital of Wisconsin, Milwaukee, and Froedtert Memorial Lutheran Hospital, Milwaukee, each performed four.

Table 6. Cardiac hospitalizations in Wisconsin, 2000

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
103	Heart Transplant	59	49.2	$201,451	155,196
104	Cardiac Valve Procedures w/ Catheterization	1,421	10.0	76,582	65,506
105	Cardiac Valve Procedures w/o Catheterization	1,392	8.0	56,176	45,813
106	Bypass with PTCA†	204	9.3	66,700	61,196
107	Bypass with Catheterization	3,819	8.8	48,450	42,140
108	Other Cardiothoracic Procedures	597	9.9	56,638	41,101
109	Bypass without Catheterization	2,317	6.4	35,912	30,083
115	Permanent Pacemaker w/ Heart Attack	271	6.8	33,887	29,927
116	Pacemaker or PTCA† w/ Stent w/o Heart Attack	11,757	2.8	22,224	20,010
117	Repair of Pacemaker Device	75	3.7	11,464	8,637
118	Replacement of Pacemaker	116	2.4	15,068	13,348
127	Heart Failure and Shock	15,173	4.5	8,150	6,326
140	Angina Pectoris	2,531	1.9	4,580	3,984
143	Chest Pain	10,568	1.6	4,684	4,188
	All Other Cardiac Hospitalizations	48,679			
	Total Cardiac Hospitalizations	98,979			

†PTCA Percutaneous Transluminal Coronary Angioplasty
Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Orthopedic Hospitalizations

Diseases and injuries to muscles and the skeletal system resulted in 56,780 hospitalizations in 2000 (not including patients treated at rehabilitation hospitals). Orthopedic patients accounted for 9.0 percent of hospitalizations and 12.2 percent of total inpatient charges in GMS facilities. No orthopedic patients were seen in psychiatric or AODA hospitals or the state-operated mental health institutes.

Major joint operations (DRG 209) were the fourth most frequent reason for hospitalization statewide and generated the most total charges of any DRG.

Table 7. Orthopedic hospitalizations in Wisconsin, 2000

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
209	Major Joint and Limb Reattachment	15,211	4.6	$19,372	$17,938
210	Hip and Femur Procs w/ Complications	3,270	6.4	17,345	14,444
211	Hip and Femur Procs w/o Complications	1,140	4.6	13,161	12,011
212	Hip and Femur Procedures - Children	474	3.6	12,098	10,370
243	Medical Back Problems	4,867	3.8	5,824	4,463
497	Spinal Fusion w/CC	1,257	5.7	29,296	24,885
498	Spinal Fusion w/o/CC	3,237	2.8	19,335	16,111
499	Back and Neck Procedures w/CC	1,065	4.1	12,897	10,157
500	Back and Neck Procedures w/o/CC	3,641	2.0	8,445	7,366
	All Other Orthopedic Hospitalizations	22,618			
	Total Orthopedic Hospitalizations	56,780			

Note: Data exclude hospitalizations at rehabilitation hospitals.

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Psychiatric Hospitalizations

GMS, psychiatric, and AODA hospitals treated 32,957 psychiatric inpatients in 2000 (up from 31,581 in 1999). They represented 5.2 percent of all hospitalizations and 3.3 percent of all hospital inpatient charges at those facilities.

The number of hospitalizations at psychiatric facilities fell by 0.6 percent from 1999 levels, while patient days declined by 3.3 percent.

The average charge per discharge at psychiatric hospitals declined 1.3 percent in 2000 to $5,972, from $6,052 the year before. The average charge at psychiatric facilities in 2000 was just 74 percent of its peak in 1991 ($8,065).

Table 8. Psychiatric hospitalizations in Wisconsin GMS, psychiatric, and AODA hospitals, 2000

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
424	Mental Illness with Surgical Operation	178	9.9	$14,234	$11,058
425	Adjustment Problems	1,363	4.1	5,222	3,850
426	Depression	4,609	5.0	3,873	2,595
427	Neuroses except Depression	2,872	5.3	3,060	1,769
428	Personality Disorders	655	10.3	6,824	3,847
429	Mental Retardation/Organic Problems	2,019	9.0	8,417	6,286
430	Psychoses	19,842	9.1	7,264	4,904
431	Childhood Mental Disorders	1,208	12.3	7,791	4,470
432	Other Mental Problems	211	11.0	5,055	2,768
	Total Psychiatric Hospitalizations	32,957			

Note: Figures exclude hospitalizations at the state-operated mental health institutes.

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

AODA Hospitalizations

Inpatient treatment of alcohol and other chemical dependencies accounted for 16,189 hospitalizations in 2000, up from 15,871 in 1999.

The state's only dedicated AODA hospital, Libertas, in Green Bay, had 139 inpatient hospitalizations in 2000, a 9.2 percent increase over its 1999 total of 128. The average charge at Libertas decreased 0.2 percent, from $9,286 to $9,264 in 2000, and the average length of stay dropped by 5.6 percent, from 16.9 days to 15.9 days.

Table 9. AODA hospitalizations in Wisconsin GMS, psychiatric, and AODA hospitals, 2000

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
433	AODA, Left Against Medical Advice	1,062	2.6	$2,684	$1,856
434	AODA, Detox with Complications	3,064	4.1	5,758	3,713
435	AODA, Detox without Complications	9,347	2.8	2,592	1,839
436	AODA, Rehabilitation Therapy	1,181	11.7	5,109	4,304
437	AODA, Comb. Rehab/Detox Therapy	1,535	7.1	6,417	5,294
	Total AODA Hospitalizations	16,189			

Note: Figures exclude hospitalizations at the state-operated mental health institutes.

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Section 2: Most Frequent, Most Expensive, and Highest Charge-Generating Reasons for Hospitalization

Most Frequently Occurring DRGs

The ten most frequently occurring DRGs (see Table 10) accounted for 32 percent of all hospitalizations and 21.4 percent of all inpatient charges at GMS, psychiatric and AODA facilities.

Birth-related hospitalizations (obstetric and neonatal—DRGs 370-375 and 385-391) accounted for 21.5 percent of all hospitalizations at these facilities, but only 7.9 percent of charges.

The average hospital stays for patients with the most frequently reported DRGs were relatively short (5.2 days or less for all but two DRGs). Average charges were also relatively low for the most common DRGs ($6,874) compared to the average charge for all inpatients at GMS, psychiatric, and AODA facilities ($10,261).

Table 10. Most common hospitalizations at Wisconsin GMS, psychiatric, and AODA facilities, 2000

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
391	Normal Newborn	51,288	2.0	$1,158	$1,077
373	Normal Delivery	46,613	2.1	3,414	3,043
430	Psychoses	19,842	9.1	7,264	4,904
209	Major Joint and Limb Reattachment	15,211	4.6	19,372	17,938
127	Heart Failure and Shock	15,173	4.5	8,150	6,326
089	Adult Simple Pneumonia and Pleurisy w/CC	13,017	5.2	8,896	7,017
116	Pacemaker or PTCA† with Stent	11,757	2.8	22,224	20,010
143	Chest Pain	10,568	1.6	4,684	4,188
462	Rehabilitation	9,548	12.9	16,734	12,232
435	AODA, Detox without Complications	9,347	2.8	2,592	1,839

†PTCA: Percutaneous Transluminal Coronary Angioplasty

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Most Expensive DRGs

Table 11 lists the ten most expensive DRGs in 2000, based on the average charge. They accounted for only 0.7 percent of all hospitalizations but 7 percent of total inpatient charges.

These DRGs required specialized treatment and long hospital stays. Most were surgical in nature. Together, they represented only 4,506 hospitalizations.

Table 11. Most expensive hospitalizations at Wisconsin GMS, psychiatric, and AODA facilities, 2000

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
504	Extensive Third Degree Burn with Skin Graft	23	44.1	$230,165	$179,911
103	Heart Transplant	59	49.2	201,451	155,196
495	Lung Transplant	26	21.2	166,239	133,600
483	Tracheostomy	1,277	40.6	160,736	140,549
480	Liver Transplant	97	22.0	139,231	107,354
481	Bone Marrow Transplant	208	30.8	129,441	97,744
104	Cardiac Valve Procedures w/Cardiac Cath.	1,421	10.0	76,582	65,506
506	Full Thickness Burn w/Graft or Inhalation Injury	60	20.4	69,308	46,926
106	Coronary Bypass with PTCA†	204	9.3	66,700	61,196
386	Extreme Immaturity or Respiratory Distress	1,131	34.6	66,638	45,084

†PTCA: Percutaneous Transluminal Coronary Angioplasty

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

DRGs with Highest Total Charges

The ten DRGs that generated the highest total charges appear in Table 12. Together, they accounted for 22.4 percent of all hospitalizations and 27.5 percent of total charges. They included a mixture of high-cost conditions (e.g., tracheostomy), high-volume DRGs (e.g., normal delivery, psychoses), and DRGs that were relatively high both in volume and charges (e.g., major joint and limb reattachments).

Table 12. Hospitalizations with the highest total charge-generating DRGs at Wisconsin GMS, psychiatric, and AODA facilities, 2000

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Total Charges
209	Major Joint and Limb Reattachment	15,211	4.6	$19,372	$294,661,274
116	Pacemaker or PTCA† with Stent	11,757	2.8	22,224	261,292,472
483	Tracheostomy	1,277	40.6	160,736	196,741,360
107	Coronary Bypass with Cardiac Cath.	3,819	8.8	48,450	184,982,265
462	Rehabilitation	9,548	12.9	16,734	159,722,731
373	Normal Delivery	46,613	2.1	3,414	159,159,761
148	Major Bowel Procedures w/CC	5,191	10.8	28,484	147,774,504
430	Psychoses	19,842	9.1	7,264	143,551,747
127	Heart Failure and Shock	15,173	4.5	8,150	123,661,006
089	Adult Simple Pneumonia and Pleurisy w/CC	13,017	5.2	8,896	115,793,942

†PTCA: Percutaneous Transluminal Coronary Angioplasty

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

CHAPTER III. E-CODES

E-codes (the "E" comes from "external" cause) are part of the International Classification of Diseases (ICD) system that all hospitals and death certificate coders use for the disease or injury resulting in hospitalization or death.

The level of detail that E-codes can express about the mechanism, or cause, of injuries is quite fine. Ranges of E-codes are reserved for broad categories of injuries, such as those arising from motor vehicle accidents, falls, firearms, and so forth. Within these categories, codes are available to describe specific injuries. For instance, codes E810-E819 denote motor vehicle traffic accidents. E813 is an accident involving a collision with another vehicle. A fourth digit (e.g., 813.1) describes who was injured, in this case a passenger. In conjunction with other injury codes, the nature of the injury can be specified (spinal cord, head, etc.).

In addition to injury mechanism (cause), policy makers and those who study injuries are often interested in another dimension: intent. Was the injury accidental, intentionally self-inflicted, or the result of an assault? A range of E-codes is reserved to signify injuries arising from suicidal or assaultive intent, from a wide variety of mechanisms.

In this report E-codes have been grouped into broader categories, like those described above. These groups are similar to those being suggested nationally for reporting injury mortality and morbidity.

Most of the categories include codes for intentionally self-inflicted and assaultive injuries. For instance, falls include codes for injuries sustained by jumping from a high place, as well as injuries caused by being pushed from a high place. In the tables that follow, categories containing significant numbers of self-inflicted or assaultive injuries have been subdivided into four components—accidental, self-inflicted, assaultive, and undetermined.

Although many categories are self-explanatory, some merit further explanation:

- *Motor vehicle traffic* accidents are those involving a motor vehicle that occur on public highways.
- *Motor vehicle nontraffic* accidents are those involving a motor vehicle that occur entirely off public highways.

Motor vehicles are defined as mechanically or electrically powered devices that can transport people or property on a highway. They include both on-road (e.g., automobile, motorcycle, bus) and off-road (e.g., snowmobile, ATV) devices.

- *Other pedal cycle* accidents include bicycle or tricycle accidents that are either non-motor vehicle or motor vehicle nontraffic in nature.
- *Other transport* includes all types of accidents involving trains, watercraft, aircraft, or transport animals, but not involving motor vehicles or pedal cycles. For instance, watercraft accidents include injuries arising from collisions with other boats, overturning or sinking of boats, fires and explosions on boats, etc.
- *Natural/environmental* injuries include those caused by exposure, hunger, thirst, venomous animals and plants, other animals (e.g., dog bites), and cataclysmic storms, lightning, or earth movement (e.g., mud slides).
- *Striking/struck by* includes injuries caused by falling objects, accidentally striking against or being struck by objects or persons (e.g., sports accidents), unarmed fights, and being intentionally struck by blunt or thrown objects.

This chapter includes information on injuries for hospital inpatients and patients treated in hospital-based ambulatory surgery settings and FASCs. The data base excludes persons treated

in emergency rooms but not admitted to the hospital (because they either died or were treated and released).

The table on the next page presents statewide data; tables follow it for each of nine analysis areas dividing the state. The tables show the number of cases, the rate per 100,000 population (based on estimated 2000 population figures), and the total charges for each injury category. Totals are also shown for self-inflicted injuries and injuries caused by assault. Inpatient and ambulatory surgery data are combined.

The chapter concludes with two additional statewide tables: one displays data on self-inflicted injuries by sex; the other presents data on assaultive injuries by sex.

Table 13. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Statewide, 2000

Statewide

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	3,240	60.4	$15,845,798
Accidental	2,325	43.3	9,481,963
Self-inflicted	705	13.1	4,135,738
Assault	191	3.6	2,109,199
Undetermined	19	0.4	118,898
Drown/Submersion	56	1.0	519,582
Falls	27,171	506.6	281,122,592
Fire/Flames	332	6.2	11,664,369
Firearms Total	500	9.3	10,951,006
Accidental	158	2.9	1,954,398
Self-inflicted	50	0.9	1,942,764
Assault	250	4.7	6,071,180
Undetermined	42	0.8	982,664
Hot Objects/Scalds	470	8.8	6,935,217
Machinery	1,176	21.9	11,051,964
Motor Vehicle Traffic	6,286	117.2	121,206,796
Other Pedal Cycle	751	14.0	4,959,943
Other Motor Vehicle Nontraffic	1,146	21.4	13,505,631
Other Transport	365	6.8	4,412,290
Natural/Environmental	1,094	20.4	7,436,500
Overexertion	6,678	124.5	36,012,504
Poisoning Total	5,543	103.3	34,196,900
Accidental	1,745	32.5	13,417,965
Self-inflicted	3,497	65.2	18,710,850
Assault	2	0.0	14,688
Undetermined	299	5.6	2,053,396
Striking/Struck by Total	4,582	85.4	30,859,814
Accidental	3,746	69.8	22,809,790
Assault	836	15.6	8,050,024
Suffocation	435	8.1	9,287,561
Other	19,217	358.3	155,094,155
Total Self-inflicted	4,790	89.3	31,342,709
Total Assaults	1,834	34.2	23,010,060
Total Injuries	**79,042**	**1,473.7**	**$755,062,621**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 14. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 1, 2000

Analysis Area 1—Southern

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	513	52.0	$2,497,659
Accidental	404	41.0	1,600,764
Self-inflicted	76	7.7	632,518
Assault	29	2.9	253,036
Undetermined	4	0.4	11,341
Drown/Submersion	16	1.6	195,899
Falls	4,887	495.4	48,429,911
Fire/Flames	82	8.3	3,697,442
Firearms Total	49	5.0	1,449,422
Accidental	20	2.0	254,016
Self-inflicted	16	1.6	654,540
Assault	11	1.1	201,012
Undetermined	2	0.2	339,855
Hot Objects/Scalds	96	9.7	1,120,474
Machinery	199	20.2	1,990,393
Motor Vehicle Traffic	1,201	121.7	25,786,745
Other Pedal Cycle	158	16.0	971,008
Other Motor Vehicle Nontraffic	206	20.9	2,429,877
Other Transport	82	8.3	1,008,606
Natural/Environmental	215	21.8	1,228,370
Overexertion	1,024	103.8	5,095,505
Poisoning Total	1,079	109.4	6,831,005
Accidental	322	32.6	2,656,139
Self-inflicted	690	69.9	3,793,067
Undetermined	67	6.8	381,799
Striking/Struck by Total	842	85.3	4,828,858
Accidental	733	74.3	4,143,390
Assault	109	11.0	685,468
Suffocation	129	13.1	4,319,698
Other	3,266	331.1	28,709,113
Total Self-inflicted	872	88.4	6,622,220
Total Assaults	225	22.8	1,812,011
Total Injuries	**14,044**	**1,423.6**	**$140,589,985**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 15. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 2A, 2000

Analysis Area 2A—Southeastern

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	405	40.8	$1,774,041
Accidental	287	28.9	1,222,351
Self-inflicted	100	10.1	362,448
Assault	17	1.7	185,214
Undetermined	1	0.1	4,028
Falls	4,019	404.8	45,226,452
Fire/Flames	22	2.2	233,521
Firearms Total	11	1.1	165,055
Accidental	5	0.5	46,512
Self-inflicted	2	0.2	16,073
Assault	3	0.3	76,313
Undetermined	1	0.1	26,158
Hot Objects/Scalds	36	3.6	299,141
Machinery	114	11.5	844,271
Motor Vehicle Traffic	665	67.0	8,490,233
Other Pedal Cycle	96	9.7	768,019
Other Motor Vehicle Nontraffic	97	9.8	1,155,871
Other Transport	40	4.0	393,291
Natural/Environmental	133	13.4	980,299
Overexertion	909	91.6	4,985,264
Poisoning Total	798	80.4	4,621,487
Accidental	187	18.8	1,241,922
Self-inflicted	547	55.1	2,806,271
Assault	1	0.1	4,204
Undetermined	63	6.3	569,089
Striking/Struck by Total	486	49.0	2,832,571
Accidental	432	43.5	2,539,860
Assault	54	5.4	292,712
Suffocation	54	5.4	1,189,161
Other	2,763	278.3	17,970,175
Total Self-inflicted	673	67.8	3,385,207
Total Assaults	117	11.8	843,212
Total Injuries	**10,648**	**1,072.6**	**$91,928,852**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 16. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 2B, 2000

Analysis Area 2B—Milwaukee County

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	819	87.1	$5,285,749
Accidental	612	65.1	3,107,043
Self-inflicted	89	9.5	758,604
Assault	114	12.1	1,373,779
Undetermined	4	0.4	46,323
Drown/Submersion	18	1.9	179,560
Falls	5,895	627.0	85,778,616
Fire/Flames	114	12.1	6,905,409
Firearms Total	346	36.8	7,762,824
Accidental	75	8.0	1,182,173
Self-inflicted	12	1.3	519,794
Assault	228	24.3	5,589,468
Undetermined	31	3.3	471,389
Hot Objects/Scalds	206	21.9	4,039,182
Machinery	268	28.5	3,669,522
Motor Vehicle Traffic	1,634	173.8	45,519,947
Other Pedal Cycle	166	17.7	1,274,943
Other Motor Vehicle Nontraffic	113	12.0	2,592,178
Other Transport	45	4.8	881,970
Natural/Environmental	210	22.3	2,118,784
Overexertion	1,525	162.2	10,801,306
Poisoning Total	1,302	138.5	11,493,094
Accidental	646	68.7	6,453,584
Self-inflicted	598	63.6	4,509,859
Undetermined	58	6.2	529,651
Striking/Struck by Total	1,232	131.0	12,520,781
Accidental	866	92.1	8,158,850
Assault	366	38.9	4,361,932
Suffocation	99	10.5	2,263,420
Other	5,122	544.8	59,898,083
Total Self-inflicted	766	81.5	7,448,467
Total Assaults	1,035	110.1	16,553,120
Total Injuries	**19,114**	**2,033.0**	**$262,985,366**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 17. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 3, 2000

Analysis Area 3—Lake Winnebago

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	300	53.1	$1,588,209
Accidental	188	33.2	576,679
Self-inflicted	102	18.0	898,591
Assault	7	1.2	96,328
Undetermined	3	0.5	16,610
Drown/Submersion	1	0.2	8,516
Falls	2,609	461.4	20,462,667
Fire/Flames	18	3.2	100,051
Firearms Total	17	3.0	257,049
Accidental	11	1.9	153,827
Self-inflicted	5	0.9	48,925
Undetermined	1	0.2	54,296
Hot Objects/Scalds	13	2.3	737,699
Machinery	117	20.7	857,064
Motor Vehicle Traffic	498	88.1	8,751,835
Other Pedal Cycle	75	13.3	451,025
Other Motor Vehicle Nontraffic	114	20.2	1,487,355
Other Transport	32	5.7	227,089
Natural/Environmental	73	12.9	663,204
Overexertion	711	125.7	3,267,426
Poisoning Total	507	89.7	2,150,841
Accidental	121	21.4	680,357
Self-inflicted	379	67.0	1,448,555
Undetermined	7	1.2	21,929
Striking/Struck by Total	388	68.6	3,420,838
Accidental	336	59.4	1,826,217
Assault	52	9.2	1,594,620
Suffocation	26	4.6	232,354
Other	2,088	369.2	13,757,045
Total Self-inflicted	553	97.8	4,141,291
Total Assaults	61	10.8	1,590,299
Total Injuries	**7,587**	**1,341.7**	**$58,420,267**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 18. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 4, 2000

Analysis Area 4—Northeastern

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	403	67.8	$1,613,233
Accidental	280	47.1	952,227
Self-inflicted	115	19.3	596,288
Assault	8	1.3	64,718
Drown/Submersion	3	0.5	26,653
Falls	3,132	526.6	24,959,236
Fire/Flames	21	3.5	213,793
Firearms Total	27	4.5	358,518
Accidental	20	3.4	142,751
Self-inflicted	5	0.8	173,105
Assault	2	0.3	42,662
Hot Objects/Scalds	26	4.4	128,655
Machinery	175	29.4	954,444
Motor Vehicle Traffic	691	116.2	8,475,218
Other Pedal Cycle	96	16.1	485,630
Other Motor Vehicle Nontraffic	150	25.2	1,245,095
Other Transport	37	6.2	324,141
Natural/Environmental	132	22.2	628,802
Overexertion	869	146.1	3,964,467
Poisoning Total	528	88.8	2,514,491
Accidental	160	26.9	784,749
Self-inflicted	348	58.5	1,628,865
Assault	1	0.2	10,484
Undetermined	19	3.2	90,392
Striking/Struck by Total	525	88.3	2,280,246
Accidental	436	73.3	1,860,687
Assault	89	15.0	419,559
Suffocation	50	8.4	487,441
Other	2,001	336.5	11,935,934
Total Self-inflicted	696	117.0	3,494,610
Total Assaults	129	21.7	856,587
Total Injuries	**8,866**	**1,490.8**	**$60,595,996**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 19. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 5A, 2000

Analysis Area 5A—West Central

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	264	61.3	$840,672
Accidental	194	45.1	650,463
Self-inflicted	66	15.3	166,802
Assault	4	0.9	23,408
Drown/Submersion	4	0.9	28,013
Falls	2,147	498.7	16,132,688
Fire/Flames	20	4.6	90,542
Firearms Total	20	4.6	460,239
Accidental	12	2.8	76,317
Self-inflicted	2	0.5	239,089
Assault	3	0.7	99,954
Undetermined	3	0.7	44,878
Hot Objects/Scalds	22	5.1	141,327
Machinery	93	21.6	473,884
Motor Vehicle Traffic	430	99.9	5,587,225
Other Pedal Cycle	47	10.9	196,280
Other Motor Vehicle Nontraffic	140	32.5	951,500
Other Transport	42	9.8	590,395
Natural/Environmental	106	24.6	507,398
Overexertion	407	94.5	2,003,962
Poisoning Total	336	78.0	1,369,646
Accidental	86	20.0	410,083
Self-inflicted	222	51.6	851,364
Undetermined	28	6.5	108,200
Striking/Struck by Total	398	92.4	1,456,083
Accidental	335	77.8	1,271,654
Assault	63	14.6	184,429
Suffocation	17	3.9	165,966
Other	1,529	355.1	8,008,392
Total Self-inflicted	320	74.3	1,367,721
Total Assaults	88	20.4	380,809
Total Injuries	**6,022**	**1,398.7**	**$39,004,213**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 20. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 5B, 2000

Analysis Area 5B—Southwestern

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	194	76.6	$993,408
Accidental	105	41.5	529,063
Self-inflicted	79	31.2	357,510
Assault	6	2.4	77,994
Undetermined	4	1.6	28,841
Drown/Submersion	7	2.8	52,338
Falls	1,339	528.8	13,370,159
Fire/Flames	12	4.7	39,770
Firearms Total	10	3.9	205,709
Accidental	6	2.4	68,602
Self-inflicted	3	1.2	120,253
Undetermined	1	0.4	16,855
Hot Objects/Scalds	10	3.9	110,011
Machinery	102	40.3	1,049,970
Motor Vehicle Traffic	426	168.2	7,094,518
Other Pedal Cycle	49	19.3	447,857
Other Motor Vehicle Nontraffic	50	19.7	664,657
Other Transport	36	14.2	342,270
Natural/Environmental	78	30.8	456,951
Overexertion	298	117.7	1,765,390
Poisoning Total	445	175.7	2,622,537
Accidental	64	25.3	443,680
Self-inflicted	368	145.3	2,129,447
Undetermined	13	5.1	49,410
Striking/Struck by Total	212	83.7	1,304,997
Accidental	175	69.1	1,121,274
Assault	37	14.6	183,723
Suffocation	27	10.7	306,608
Other	687	271.3	6,502,149
Total Self-inflicted	462	182.4	2,704,041
Total Assaults	61	24.1	327,994
Total Injuries	**3,982**	**1,572.5**	**$37,329,298**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 21. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 6, 2000

Analysis Area 6—North Central

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	276	60.7	$1,072,647
Accidental	208	45.8	766,170
Self-inflicted	61	13.4	264,020
Assault	5	1.1	31,868
Undetermined	2	0.4	10,589
Drown/Submersion	7	1.5	28,605
Falls	2,613	574.9	23,406,122
Fire/Flames	41	9.0	371,248
Firearms Total	19	4.2	283,322
Accidental	9	2.0	30,201
Self-inflicted	5	1.1	170,985
Assault	3	0.7	61,771
Undetermined	2	0.4	20,365
Hot Objects/Scalds	54	11.9	303,455
Machinery	101	22.2	1,199,880
Motor Vehicle Traffic	657	144.6	11,118,910
Other Pedal Cycle	56	12.3	341,706
Other Motor Vehicle Nontraffic	245	53.9	2,809,578
Other Transport	43	9.5	603,711
Natural/Environmental	126	27.7	797,793
Overexertion	847	186.4	3,728,815
Poisoning Total	434	95.5	2,091,675
Accidental	120	26.4	621,138
Self-inflicted	279	61.4	1,204,808
Undetermined	35	7.7	265,730
Striking/Struck by Total	428	94.2	1,983,930
Accidental	378	83.2	1,704,231
Assault	50	11.0	279,699
Suffocation	27	5.9	298,205
Other	1,611	354.4	7,665,114
Total Self-inflicted	360	79.2	1,723,387
Total Assaults	98	21.6	586,265
Total Injuries	**7,585**	**1,668.8**	**$58,104,715**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 22. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 7, 2000

Analysis Area 7—Western Lake Superior

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	66	45.3	$180,180
Accidental	47	32.2	77,204
Self-inflicted	17	11.7	98,957
Assault	1	0.7	2,854
Undetermined	1	0.7	1,166
Falls	530	363.6	3,356,740
Fire/Flames	2	1.4	12,594
Firearms Total	1	0.7	8,869
Undetermined	1	0.7	8,869
Hot Objects/Scalds	7	4.8	55,273
Machinery	7	4.8	12,536
Motor Vehicle Traffic	84	57.6	382,165
Other Pedal Cycle	8	5.5	23,475
Other Motor Vehicle Nontraffic	31	21.3	169,519
Other Transport	8	5.5	40,818
Natural/Environmental	21	14.4	54,899
Overexertion	88	60.4	400,369
Poisoning Total	114	78.2	502,124
Accidental	39	26.8	126,313
Self-inflicted	66	45.3	338,614
Undetermined	9	6.2	37,197
Striking/Struck by Total	71	48.7	231,509
Accidental	55	37.7	183,627
Assault	16	11.0	47,882
Suffocation	6	4.1	24,708
Other	150	102.9	648,151
Total Self-inflicted	88	60.4	455,765
Total Assaults	20	13.7	59,763
Total Injuries	**1,194**	**819.2**	**$6,103,929**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 23. Self-inflicted injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), 2000

Statewide

Injury Category	Male	Female	Total Cases
Poisoning by solid or liquid substances	1,080	2,380	3,460
Poisoning by gases in domestic use	2	0	2
Poisoning by other gases (e.g., car exhaust)	23	12	35
Hanging, strangling, and suffocation	30	16	46
Submersion (drowning)	1	0	1
Firearms and explosives	46	5	51
Cutting/piercing	294	411	705
Jumping from a high place	18	7	25
Other self-inflicted injuries	207	258	465
Total self-inflicted injuries	1,701	3,089	4,790

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 24. Assaultive injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), 2000

Statewide

Injury Category	Male	Female	Total Cases
Unarmed fight or brawl	525	137	662
Rape	1	3	4
Poisoning	0	2	2
Hanging and strangling	0	1	1
Firearms and explosives	224	20	244
Cutting/piercing	152	39	191
Child battering and other maltreatment	48	80	128
Striking by blunt or thrown object	126	25	151
Bite of human being	61	40	101
Other assaultive injuries	274	76	350
Total assaultive injuries	1,411	423	1,834

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.